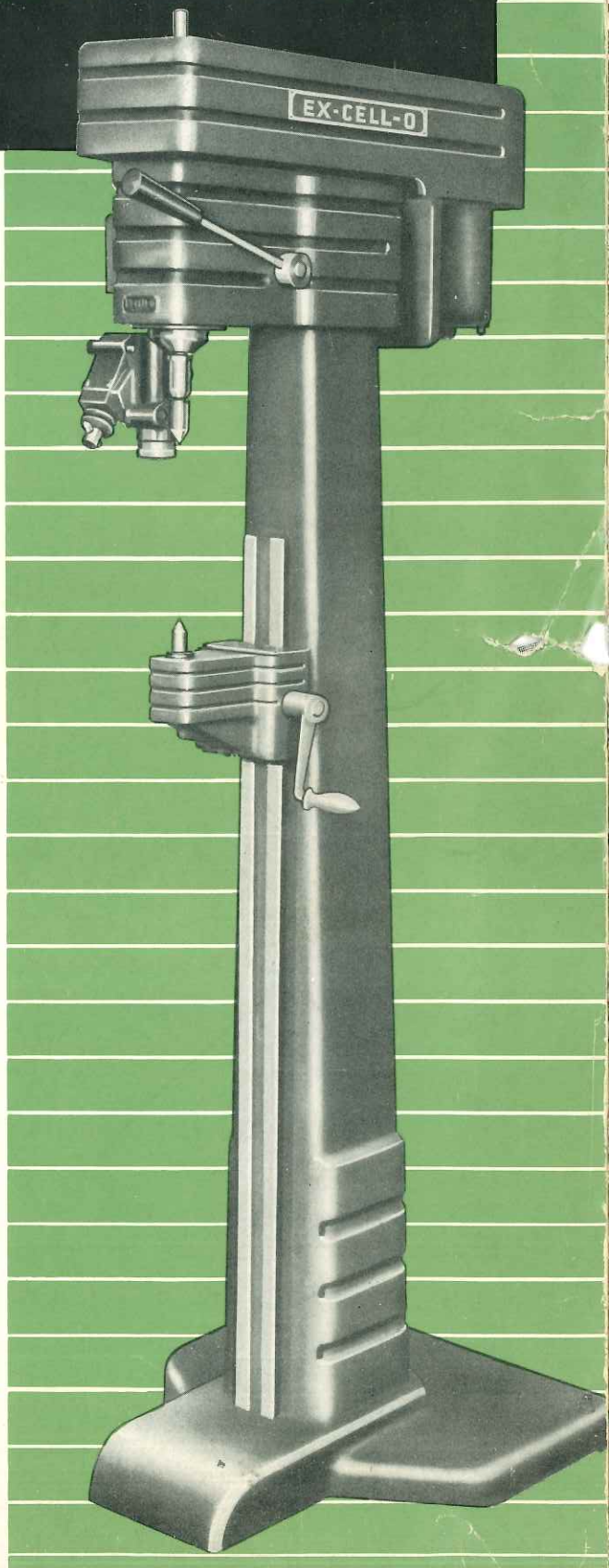
BULLETIN NO. 40271

EX-CELL-O

Center Lapping

MACHINES

To Get GREATER PRECISION From Grinding Equipment



Ex-Cell-O Center Lapping Machines prepare centers for maximum accuracy

Because the demand today is for products with greater accuracy and longer life, production executives are demanding closer tolerances in thread grinding and "O.D." grinding operations. To obtain this precision, in grinding between centers, care must be taken that the female centers themselves be accurately conditioned. The distortion from heat treating and the inaccuracies of rough centers must be corrected before precision limits for roundness, straightness and concentricity can be held.

It may not be the fault of your grinders that you cannot hold closer tolerances. With smooth, correctly shaped centers, you can obtain greater precision from your present equipment. Center lapping will help your company to a better competitive position; you can make a better product and at the same time reduce manufacturing costs. Waste from grinding rejections can be minimized. Closer tolerances will reduce your assembly time, too, by abolishing "select fits." Another saving from accurate centers is in the maintenance of machines—the life of male centers is greatly prolonged.

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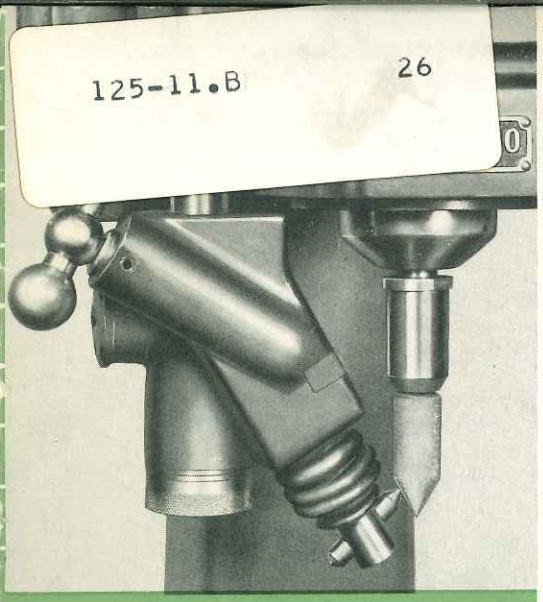
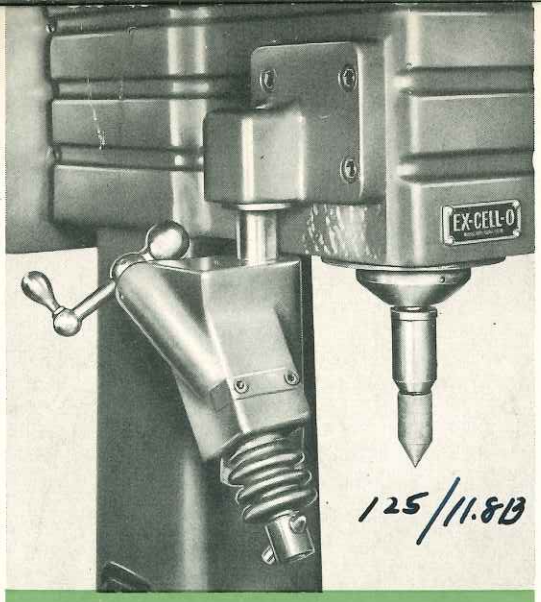


Lapping stone is dressed by swinging the diamond trueing device into position and stroking across the abrasive stone by means of a small hand lever.



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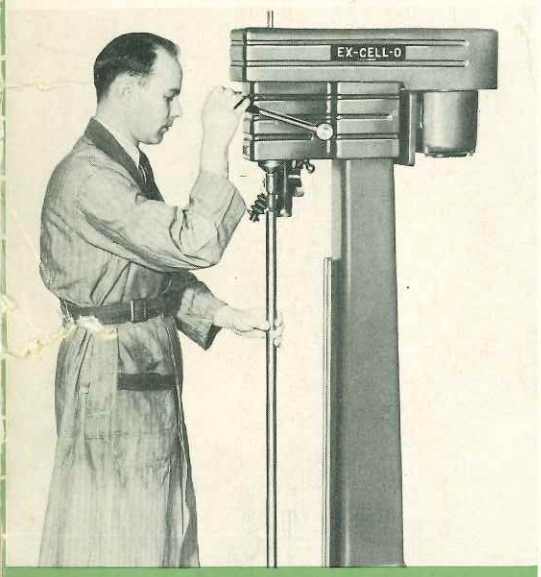
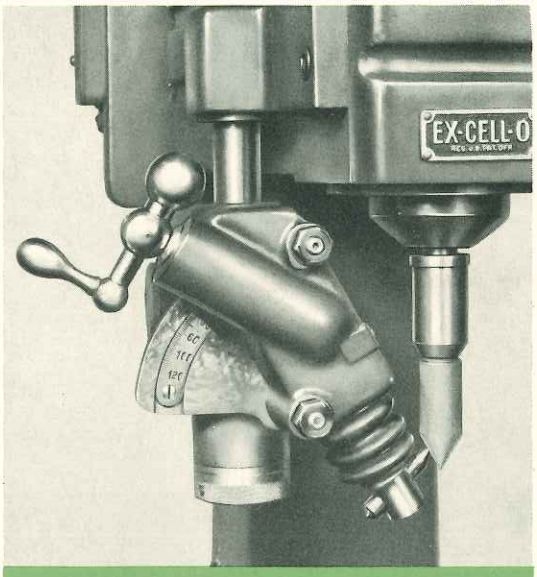
When not in use, the dresser is swung 90° out of the way. A slight turn of the vertical adjustment screw on the dresser measures the depth of the next dressing cut on the lapping stone.

On both styles of Ex-Cell-O Precision Center Lapping Machine, the electric motor is mounted at the top of the machine column on the side away from the operator.

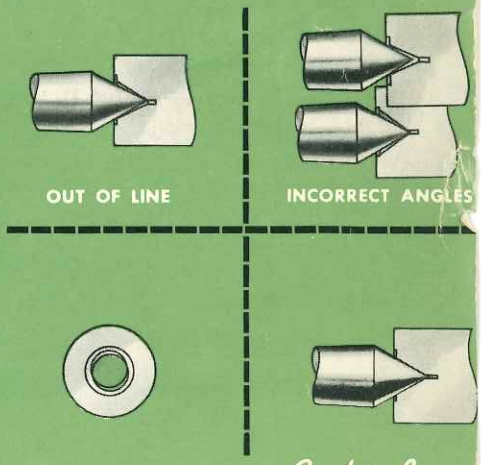


The adjustable work rest may be locked in position to any desired height by hand crank, to suit the length of work.



Adjustable Dresser available for use on the Style 74-A Center Lapping Machine may be set to dress the lapping stone to any included angle from 60° to 120°. Graduations show the angular adjustment.

Eliminate out-of-line, out-of-round, and incorrect angles by *Center Lapping*



Recognizing the need for better centers, the tool rooms of some shops have devised various makeshift arrangements to "serve the purpose," but these methods are slow and uncertain, because most of this adapted equipment was never intended for precision work. Ex-Cell-O Center Lapping Machines fill a real need in tool rooms and production departments as well. They are machines that are especially designed for the job . . . they are fast and accurate! With one of these precision machines, your parts can be prepared to obtain the maximum accuracy from your grinding equipment.

Every Ex-Cell-O Machine is a Precision-Made Machine!

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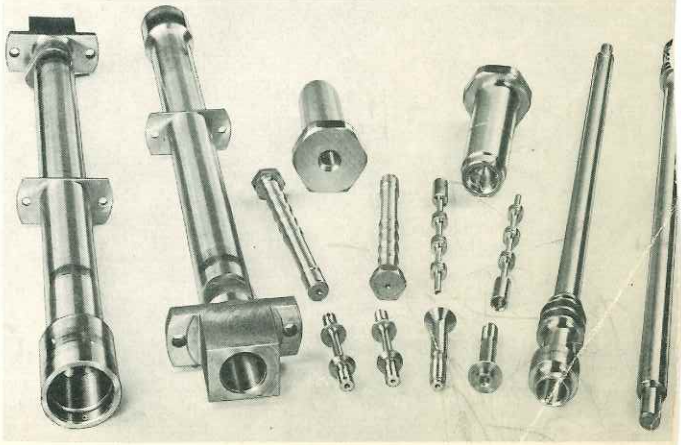

Typical parts precision-lapped on Ex-Cell-O Center Lapping Machines. Maximum accuracy of centers is assured by this lapping process.

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DESCRIPTION of Ex-Cell-O Center Lapping Machines

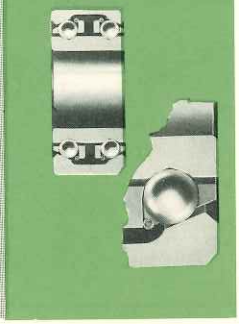
Designed for accurate lapping of standard 60° female work centers, Ex-Cell-O Center Lapping Machines are *precision* machines in every respect. In their manufacture, particular care is taken to assure a lifetime of perfect spindle and work rest alignment. An Ex-Cell-O Precision Ball Bearing Spindle rotates the lapping stone, being driven by an electric motor through an endless "V" belt. Two four-step pulleys are provided for speed changes.

Accuracy and long life for the spindle are assured by preventing belt tension from being transmitted to the spindle shaft and bearings. The spindle pulley rotates in its own ball bearings and drives the spindle shaft through a floating spline bushing. The spindle body is closely fitted in hardened, ground and lapped bushings in the spindle bracket, which is mounted to the top of the column. The spindle is vertically operated by a hand lever. *Sensitivity* to lapping pressure is provided by spring loading the spindle.

Scraped ways on the machine column assure perfect alignment of the work rest center and the spindle. The adjustable work rest is locked in position at any desired height by a hand crank. A safety cam lock, conveniently located under the center, prevents the work rest from dropping when the hand crank is released.

A rugged diamond dressing device is mounted to the spindle bracket. This dresser is easily operated and accurately trues the lapping stone to a sharp 60° point. Dressing is performed by swinging the dresser into position and passing the diamond tool across the rotating lapping stone while the spindle is held at the extreme top of the stroke. By the worm and rack arrangement between the handle and the diamond tool carrier, a low rate of diamond speed across the lapping stone produces a smooth dressed surface. A vertical screw adjustment built into the device accurately positions the diamond dresser for each trueing of the stone. When not in use, the dresser is swung 90° out of the way. Special adjustable dressers for angles other than 60° can be furnished on request.

Standard abrasive sticks and pencil wheels are used. The shank is held in the spindle by a set screw and is easily changed.



To right: Ex-Cell-O precision bearings make the Ex-Cell-O spindle (used on Ex-Cell-O Center Lapping Machines) one of preference for all precision machine tools.

SPECIFICATIONS:

	Style 74-A	Style 74-AL
Maximum Diameter of Work	10"	10"
Maximum Length of Work	36"	60"
Maximum Diameter of Centers	15/16"	15/16"
Maximum Diameter Lapping Stone	1"	1"
Lapping Stone Shank Size	½"	½"
Distance, Centers to Column	5¼"	5¼"
Lapping Spindle Speeds	665 r.p.m. 1280 r.p.m. 2300 r.p.m. 4300 r.p.m.	665 r.p.m. 1280 r.p.m. 2300 r.p.m. 4300 r.p.m.
Spindle	Equipped with Ex-Cell-O Precision Ball Bearings	
Maximum Stroke of Lapping Spindle	1½"	1½"
Maximum Stroke of Dressing Diamond	1¼"	1¼"
Vertical Adjustment of Dresser	1½"	1½"
Driving Motor	1800 r.p.m., ½ h.p.	1800 r.p.m., ½ h.p.
Over-all Height	68"	89"
Floor Space	20½" x 26"	20½" x 26"
Net Weight of Machine	380 lbs.	440 lbs.
Weight Crated for Domestic Shipment	500 lbs.	550 lbs.

Specifications of Ex-Cell-O Precision Center Lapping Machines with special work lengths are available on request.

EX-CELL-O MANUFACTURES:

PRECISION BORING, THREAD GRINDING, SPECIAL-PURPOSE AND JET BLADE FINISHING MACHINES, TOOL GRINDERS, HYDRAULIC POWER UNITS, GRINDING SPINDLES, AIRCRAFT AND MISCELLANEOUS PRECISION PARTS, DRILL JIG BUSHINGS, RR PINS AND BUSHINGS, CUTTING TOOLS AND BROACHES AND DAIRY EQUIPMENT.

Form B52-15

XLO
EX-CELL-O *for* PRECISION

EX-CELL-O CORPORATION

DETROIT 32, MICHIGAN • U.S.A.